

FRED® easy Ethernet

The first defibrillator featuring automatic data transmission to a server

The FRED® easy Ethernet is an external defibrillator, available in semi-automatic or automatic mode, that can transmit data taken during an intervention of a patient. Both intervention data and the device settings can be sent to a server via an Ethernet network.

Transmission is easy, fast and safe. The data is stored centrally for direct access by authorised persons from any computer connected to the network.

This system considerably simplifies the handling of medical and administrative patient data (no paper, no memory card).

Advantages for everyone:

- Automatic and safe data transmission
- Central data storage
- Immediate access to patient data
- Multi-user access to the data via any computer connected to the network (hospital, treating physician, cardiologist, rescue services, administration)
- Automatic time update on every connection
- Data is compatible with the SCHILLER evaluation software
- Simplified administration for multi-defibrillator installations
- Also available in manual defibrillation mode

Options:

- ECG display



LifeDataNet:

The transmitted data is stored on a central server with the **LifeDataNet** application.

Sending of two distinct data types:

- Patient data (events, ECG curve, patient impedance)
- Configuration and maintenance information

The **LifeDataNet** application is a simple and practical interface enabling you to:

- See which device has transmitted the data (serial number, identification, transmission date and time)
- Download and analyse patient data using the SCHILLER evaluation software
- View the device settings (mode, energy settings, options)
- View the maintenance status (self-test result, battery status, software version)



SCHILLER
The Art of Diagnostics

Technical Specifications FRED® easy Ethernet:

Dimensions and weight:

Dimensions: 70 mm x 230 mm x 220 mm (h x w x d)

Weight: 1.5 kg with battery

Ambient conditions:

Ambient temperature (operating and standby): 0° C to 50° C

Relative humidity (operating and storage): 0 % to 95 %, noncondensing

Storage and transport temperature: -20° C to +50° C

Atmospheric pressure: 700 to 1060 hPa

Shock resistance, drop height: MIL-STD-810 F: drop height 1 m on each corner, edge and surface; after which normal operation

Vibration: DIN EN 1789

Leak test: IEC 60601-2-4, article 44

Electrostatic compatibility: IEC 60601-1-2

Electromagnetic radiation: IEC 60601-1-2

Flightworthiness: RTCA/DO 160D :1997, section 21

Defibrillator:

Type of defibrillation pulse: *Multipulse Blowave®* (patented):

- Biphasic pulsed defibrillation impulse with a fixed physiological optimum phase duration of 4 ms for the 1st phase; active for defibrillation
- Constant energy emitted according to the patient's resistance

Energy settings:

- Energy values can be configured out of the following range by set-up: 1 - 2 - 4 - 6 - 8 - 15 - 30 - 50 - 70 - 90 - 110 - 130 - 150 J (adults); 1 - 2 - 4 - 6 - 8 - 15 - 30 - 50 - 70 J (paediatric)
- Automatic changeover when the paediatric electrodes are plugged in

Charge control: Automatic if shock is recommended based on the analysis

Charging time from shock recommendation to shock stand-by: < 10 s

Cycle time shock - shock: According to ERC and AHA

Indication when ready to shock: Flashing of shock button

Control of shock discharge: By means of shock button

Safety discharge: A charged defibrillator is internally discharged if:

- The patient's rhythm does not require a shock
- No shock is triggered within 20 s after first signalling of shock stand-by
- The defibrillation electrodes have been removed from the patient or have become loose
- The „ON/OFF“ button is pressed

Shock release: Via anterior/anterolaterally placed electrodes (lead II)

Rhythm analysis and protocols:

Electrode contact: Check by means of impedance measurement

Rhythm analysis: Analysis of the heart rhythm in the ECG signal to determine if a rhythm requires a shock

Rhythms requiring a shock: Ventricular fibrillation (VF), ventricular tachycardia (VT) of >180 beats/minute

Analysis performance (VF requires shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (VT requires shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (sinus rhythm, does not require shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (asystole, does not require shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (all other rhythms not requiring shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Protocols: Ex works with ERC or AHA protocol;

option: Customer-specific protocols on request

Battery:

Type: Li-MnO₂

Capacity: 180 shocks at 150 J or 6h30 operation (without shock)

Shelf life (storage out of device): 10 years

Operating life (storage/stand-by): 5 years

Operating elements and displays:

LCD: 100 mm x 37 mm, high resolution, with EL background lighting, text and optional ECG display

LED lights: Electrode connection indicator, battery status, stand-by indicator

Speaker: Spoken instructions (volume control via set-up)

Alert: Beep in the case of faulty device status

Status indicator: Flashing LED indicating the device's stand-by status (including battery status)

Defibrillation electrodes:

- **Adult electrodes:** 75 cm² of active surface per electrode

- **Pediatric electrodes:** 38 cm² of active surface per electrode

Electrode cable: 1.95 m

Storage, programming, communication:

Software update: Via interface from PC/laptop and FRED CO software

Storage option: Saving ECG and events with additional audio in the internal memory; recording of 30 minutes ECG and ambient noise or 500 events.

Communication: Transmission of events, ECG and patient resistance

Device:

Network connection: Type 10 Base T 10/100 MB

Ethernet cable: Standard (category 5)

FRED easy network configuration: Via interface from PC/laptop and FRED CO software

Identification in the network: In DHCP mode or via a fixed programmable IP address

Server: LifeDataNet

The server can be provided by SCHILLER (LifeDataBox) or the customer. It must be compatible with Windows 2003 or Linux version ≥ 2.4 and be able to execute PHP script.

A dedicated server is recommended.

Minimum PC requirements:

- Safe web server (SSL + Apache version ≥ 1.3, IIS version ≥ 5.0)
- PHP (version ≥ 5.2.4) with extensions 'Sockets' and 'My SQL'
- Net-SNMP (version ≥ 5.4.1)
- Windows XP or 2003, Linux version ≥ 2.4
- Processor: Type Celeron
- Clock frequency: 1 GHz
- Memory: 1 GB
- Harddisk: 20 GB
- Network interface: Ethernet 10/100

Communication protocol between FRED easy and LifeDataNet on the server: https (secure http)

All specifications are based on an environmental temperature of 25° C (if not separately indicated).

Technical data and images are subject to change without notice.

The FRED® easy Ethernet is also available as a manual mode version.

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